

California Bay-Delta Authority

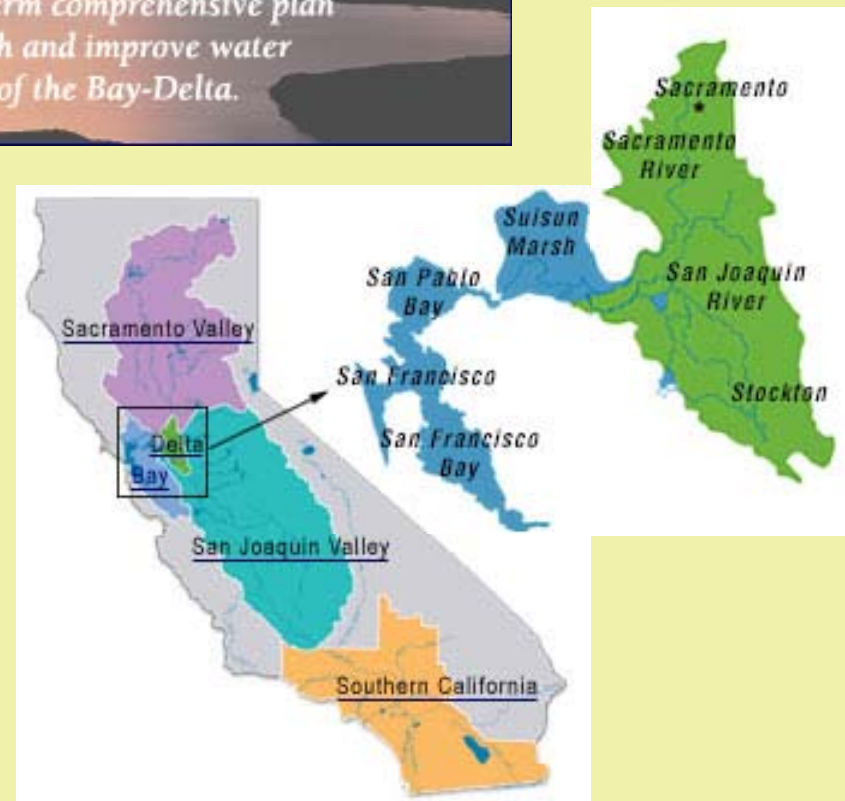
The mission of the California Bay-Delta Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta.

Resource Management Objectives



Program Elements

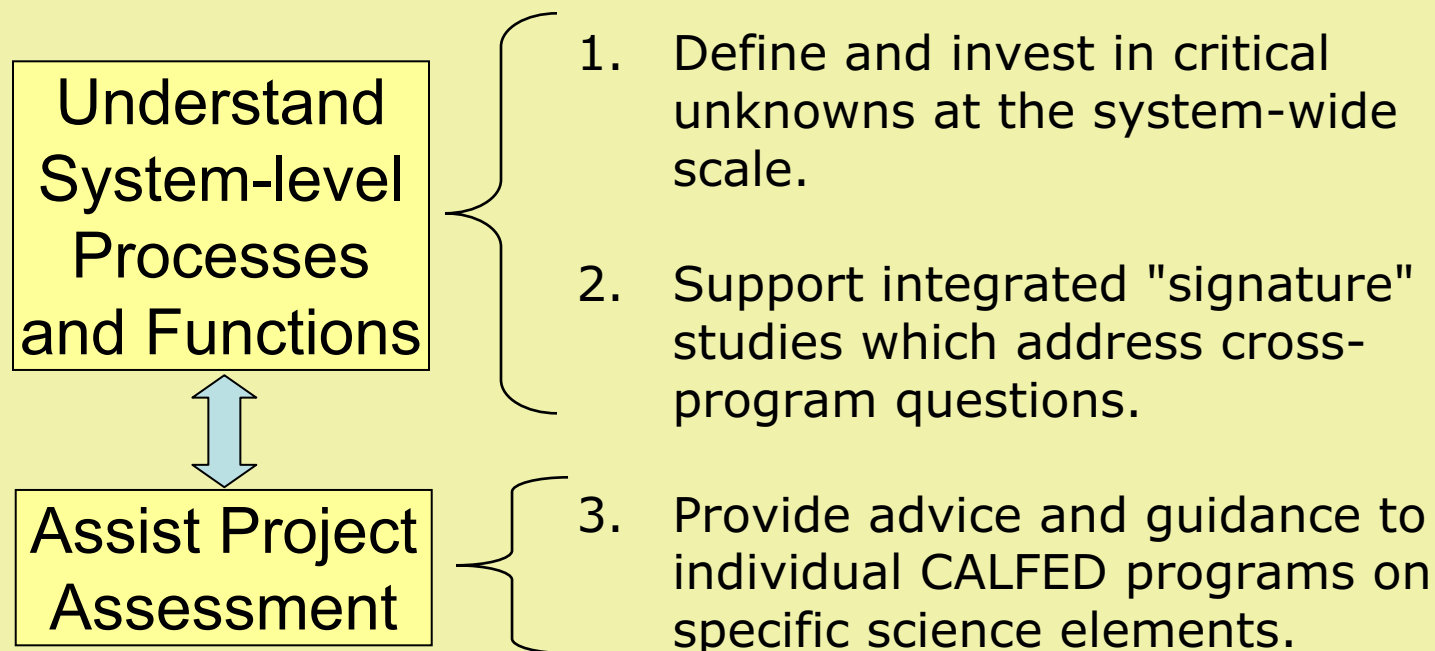
Water Management
Storage
Conveyance
Water Use Efficiency
Water Transfers
Envir. Water Account
Drinking Water Quality
Watershed Management
Levee Integrity
Ecosystem Restoration
Science





Reality: We now have to actively manage our environment to assure viable water resources and ecosystems.

Goal: Integrate the best available knowledge across CALFED programs to make sure that management works.



Scientific Meetings

3rd Biennial CALFED Bay-Delta Program Science Conference

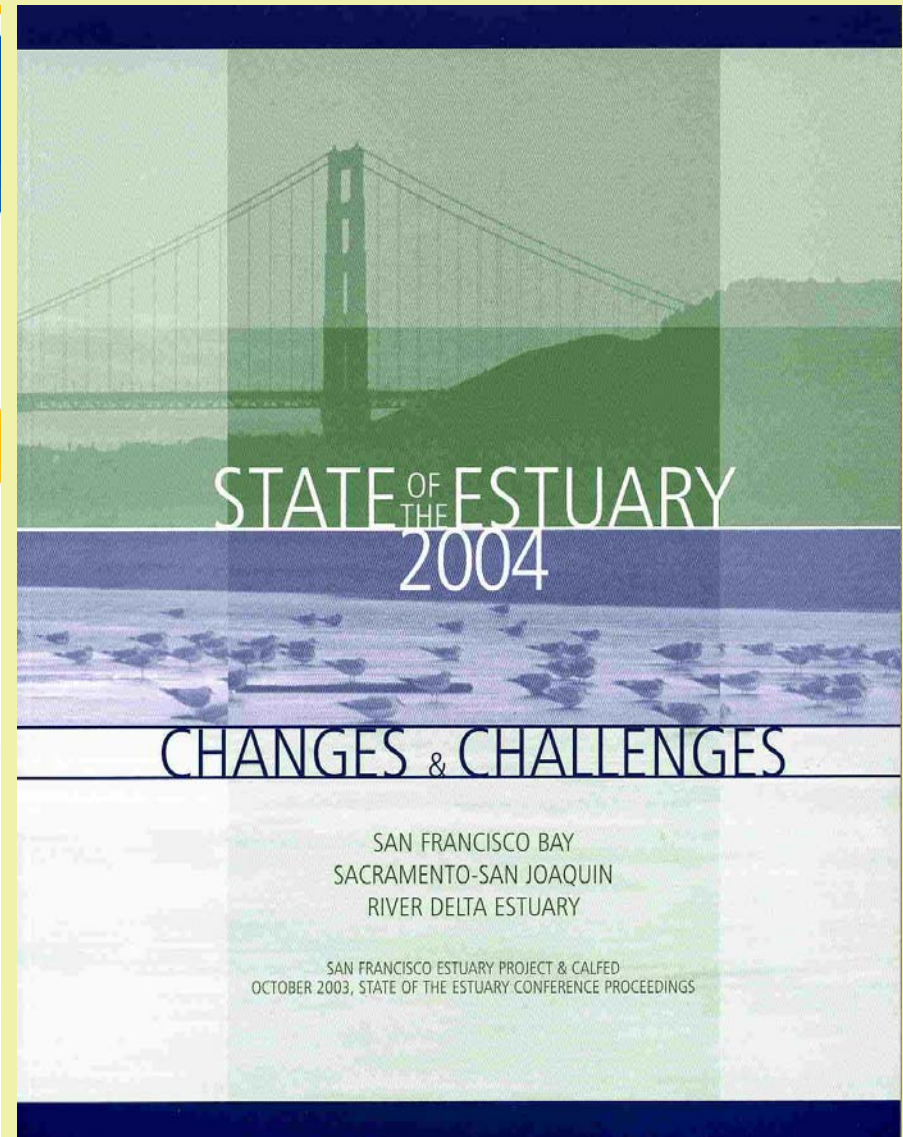
Sacramento Convention Center
1400 J Street
Sacramento, California

GETTING RESULTS: Integrating Science and Management to Achieve System-Level Responses

The Biennial **CALFED Bay-Delta Program Science Conference** is a forum for presenting scientific information and ideas relevant to the Program's goals and objectives in the Bay-Delta, its watershed, and the adjacent coastal ocean. The goal of the conference is to provide new information (i.e., results, models, syntheses, analyses) to the broad community of scientists, engineers, managers, and stakeholders working on Bay-Delta Program-related issues.

The conference program features a mix of plenary and contributed talks and poster presentations on topical themes of interest. The late afternoon poster sessions and receptions provide an opportunity for discussion between presenters and attendees.

October 4–6, 2004 **Sacramento Convention Center**



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of the Fish and Wildlife Resources of
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Publications for the Public and Managers

(Print and Online)



NEWS FROM THE CALIFORNIA BAY-DELTA AUTHORITY SCIENCE PROGRAM

SCIENCE IN ACTION

Demystifying the Delta

Scientists plumbing depths, gauging tides, and chasing fish have been unveiling the underwater landscape and life of the Delta. How best to manage this 800,000 acre tangle of canals, cuts, levees and islands — a place that hardly resembles any past ecosystem but certainly serves the farms and cities of modern day California with its drinking and irrigation waters — has stymied scientists, engineers, environmentalists and government agencies for decades. Yet its users and managers remain deeply engaged in a long-term effort to find a "thru-Delta" solution to persistent conflicts between water supply, water quality and endangered fish, rather than doing a concrete end run around the Delta's complications. And they're making progress.

The Sacramento-San Joaquin Delta formed when two great rivers meandered across a vast inland marsh toward the sea. But humankind tinkered endlessly, and without a central plan, with this landscape — diverting water, building levees, planting crops, growing towns. And as we strove to take only the freshest waters out of this naturally salty estuary, year after year, we arrived at a point not long ago when we also began "taking" too many of the last few winter-run chinook salmon and delta smelt on the planet.

As one century rolled into the next, a five-year old cooperative state and federal program called CALFED (now overseen by the California Bay Delta Authority) decided on the thru-Delta approach to managing these water conflicts. The idea was to work towards optimization of the existing channels, pumps and fish facilities in the Delta, rather than sending out the guys and gals with the hardhats and backhoes to build bigger and better ones. And as the teams of scientists CALFED assigned to this task intensify their studies, they're suggesting some new twists to old concepts about how the Delta works, and some innovative ways to manage how tides, river flows, fish and salt interact in this complex system.

"In the Delta, we've learned that water doesn't flow like a river, that fish don't simply travel from point A to point B, and that channel and island

geometry affect salt transport," says Kim Taylor, deputy director of science for the Authority. "It's a whole different ballgame thinking of our water and fish as moving through a mixing bowl, rather than through a series of one-way canals."

As CALFED explored opportunities to optimize the Delta system, its research began to suggest that our longtime leaning on the "net flow" model of the Delta, which measures direction and rate of water movement after removing tides from the equation, may be limiting our management options. Scientists also began to question our focus on screens, salvage, and take limits as the primary tools for protecting fish (when "incidental take" limits of endangered fish are exceeded at the water export pumps, regulatory red lights stop the turbines).

Researchers now think we may find more opportunities in tapping the tides rather than turning to already tapped out rivers. They've produced new ideas for how to do this at three critical waterway junctions in the Delta. They've also developed new ways to count and track fish, new cameras for seeing underwater, new water budgets to minimize the take of salmon and smelt at the pumps, and new 3-D models simulating the transport of

water, salt, and fish through key flooded islands. The result is a whole new frontier of understanding of the Delta's internal dynamics and how its natural processes interact with our unnatural efforts to withdraw its least salty waters.

"It's really hard to understand something you can't see," says Diana Jacobs, Deputy Director of the California Department of Fish & Game. "You can see the salmon spawning in the clear creeks and rivers upstream. But the Delta is turbid and tidal. All this new technology and research is allowing us to go underwater in the Delta and study what's really going on."

Continued page 2

THREE PLACES TO OPTIMIZE DELTA DYNAMICS



PUBLICATION OF THE CALIFORNIA BAY-DELTA AUTHORITY SCIENCE PROGRAM

NEW RELEASE

NEW AND NOW ON-LINE

The CALFED Bay-Delta Program has invested in first-rate science to help us better understand the complexities of the San Francisco Estuary, but this work is not always accessible to managers working to meet CALFED goals.

Management Cues are a new tool to help communicate relevant scientific advances to managers and policymakers. These Cues highlight important new conclusions and relevant working hypotheses in non-technical language. They synthesize cutting-edge science, and point to its potential application in the San Francisco Estuary. All the Cues are current and reflect concepts that scientists hope resources managers will use in their planning.

Management Cues are written by CBDA Science Program staff and reviewed by scientists and managers for accuracy.

MANAGEMENT CUES ARE AVAILABLE ONLINE AT:

<http://science.calwater.ca.gov/>

Management

CUES

OCTOBER 2004



SIGN UP for the science program email update to be alerted when new cues are published.

Recent Whitepapers

Tidal Wetland Habitats and Processes

Open Water Processes

Splittail

Delta Smelt

Central Valley Salmonids

Contaminants

Riparian Habitats

http://science.calwater.ca.gov/white_papers.shtml

Grants



CALIFORNIA BAY-DELTA AUTHORITY SCIENCE PROGRAM

SOLICITATION FOR PROPOSALS *Water Supply and Ecosystem Resource Management*



\$18 - \$20 MILLION AVAILABLE

♦ CALIFORNIA BAY-DELTA AUTHORITY SCIENCE PROGRAM ♦

The California Bay-Delta Authority Science Program is announcing its first solicitation for research proposals in support of the CALFED Bay-Delta Program. Approximately \$18-\$20 million will be available for research in three broad topic areas:

Improve knowledge of key aquatic species and how water management activities affect populations across broad spatial and temporal scales from upstream rivers through the San Francisco Estuary

Further develop understanding of ecosystem processes in the Sacramento-San Joaquin Delta, Suisun Marsh, and upstream rivers and their relationship to factors critical for water and aquatic species management

Provide a framework for assessing how future changes such as population or climate-related hydrological shifts may affect water operations and ecosystem processes, and the success of CALFED projects

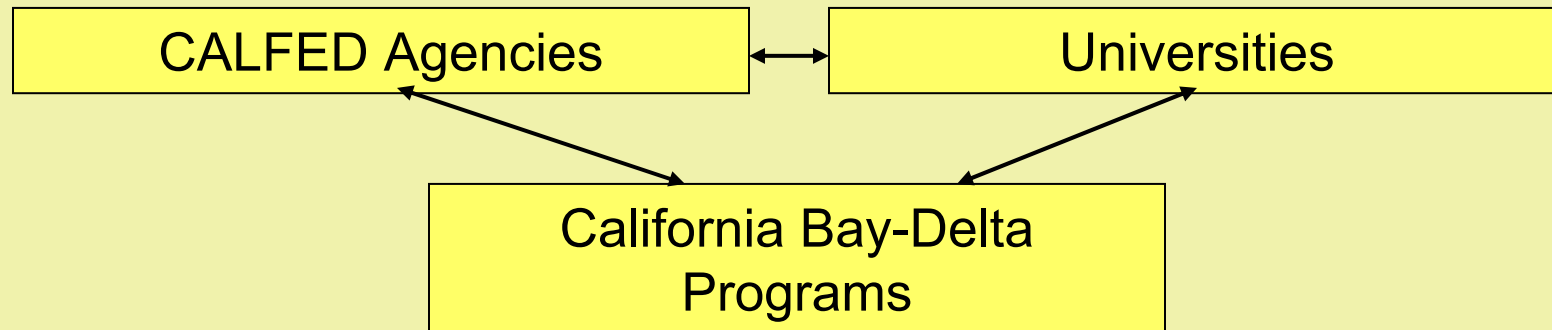
To access information about this opportunity, as well as an additional \$20 million available through the CALFED Bay-Delta Program's solicitation for monitoring and evaluation of its ecosystem restoration actions, please visit:

<https://solicitation.calwater.ca.gov>

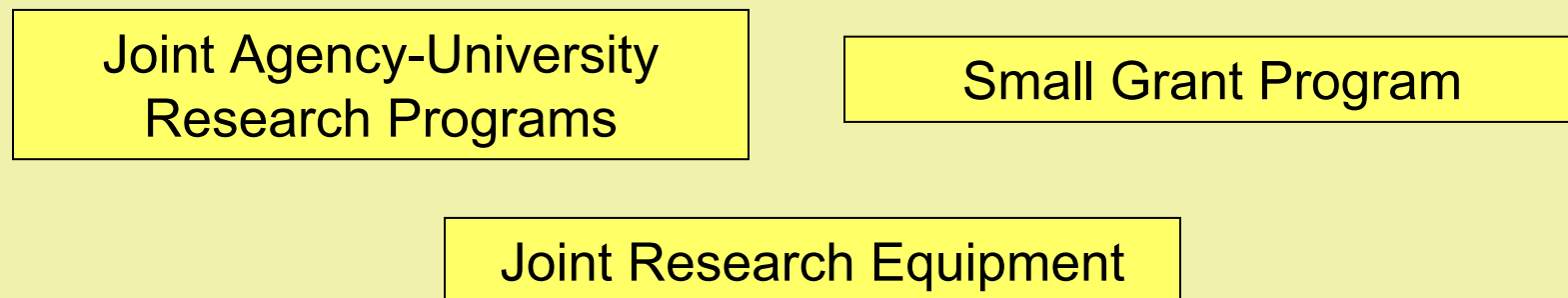
*For additional information, email help@solicitation.calwater.ca.gov
or call the PSP Helpline at 877/408-9310*



Post Docs and Research Assistantships



Science Consortium



2004 Public Workshops

Contaminant Stressors in the
Bay-Delta Watershed

--February '04

Suisun Marsh Workshop

--March '04

Rivers, Rocks and
Restoration: Learning from
the Past Learning from the
Future

--July '04

Environmental Water
Account: The last four years

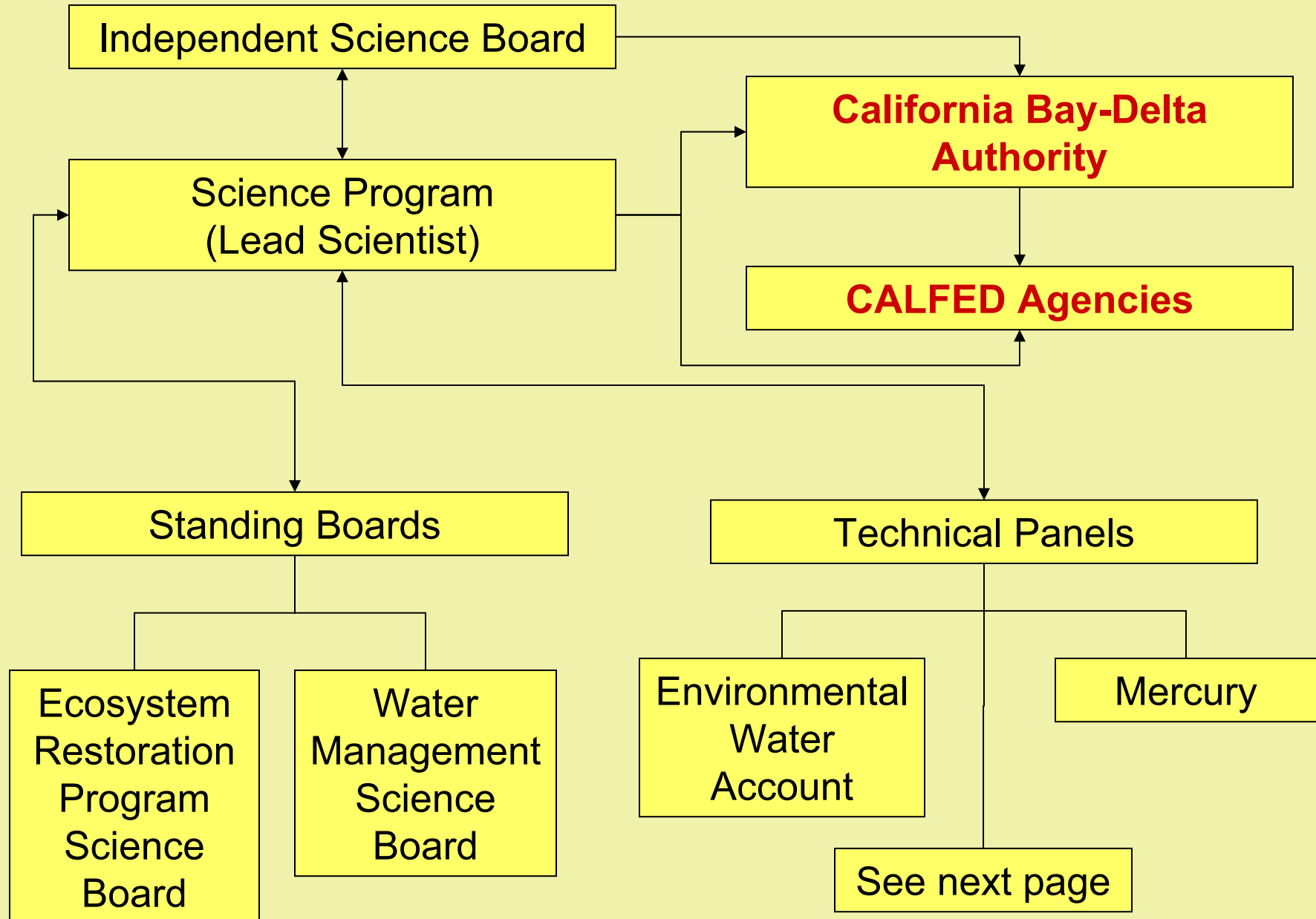
--September '04

Indicators of Ecological
Viable Floodplains

--January '05

An additional 12 Workshops in 2003
and 5 more planned for 2005

Science Boards



Technical Panels continued

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graph TD; A[Technical Panels continued] --- B[Upper Yuba River Restoration]; A --- C[Dissolved Oxygen in Stockton Ship Channel]; A --- D[Sacramento Splittail Populations]; A --- E[Hydrodynamics and Levee Breaches]; A --- F[Battle Creek]; A --- G[In-Delta Storage]; A --- H[Delta Cross Channel Investigations];
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**Upper Yuba River
Restoration**

**Dissolved Oxygen in
Stockton Ship Channel**

**Sacramento Splittail
Populations**

**Hydrodynamics and Levee
Breaches**

Battle Creek

In-Delta Storage

**Delta Cross Channel
Investigations**



Independent Science Board

The Independent Science Board is designed to be a standing board of distinguished experts (scientists and engineers) with a range of multi-disciplinary expertise including those with local experience and those with external relevant expertise.

These experts will help the California Bay-Delta Authority establish an independent and objective view of the science issues that underlie important policy decisions.

Independent Science Board Members

Ken Cummins, *California State University, Humboldt.*

Thomas Dunne, *University of California Santa Barbara*

David Freyberg, *Stanford University*

William Glaze, *Oregon Health and Science University*

Helen Ingram, *University of California, Irvine*

Jack Keller, *Keller-Bleisner Engineering, & Utah State University*

Jeff Koseff, *Stanford University*

Samuel Luoma, *US Geological Survey*

John Melack, *University of California, Santa Barbara*

Judith Meyer, *University of Georgia*

Jeff Mount, *University of California, Davis*

Duncan Patten, *Montana State University*

Denise Reed, *University of New Orleans*

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Science Boards Organization

